COVID-19 Deaths in the USA

A quick analysis of fatalities across State, Ethnicity/Race and Age Groups

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The Question:

They say this horrible virus does not discriminate.

America is bearing a terrible toll.

But do we see the toll borne evenly across Americans?

The Data

Deaths data from Health.gov

- COVID19 deaths, by state, by race, by age group : 4,761 rows, 13 columns

Population estimates data from the Center for Disease Prevention

- Population data (postcensal estimated data for July 1, 2018): 22,000 rows, 6 columns

EDA Issues

- Mismatched Ethnicity/Race groupings in the 2 datasets
- Mismatched Age Groups in the 2 datasets
- New York City data included in the states tables (in addition to New York State)
- Little or no valid data for minors (due to confidentiality issues)
- No data for Puerto Rico

Findings

USA COVID-19 Deaths by State as on July 15th, 2020
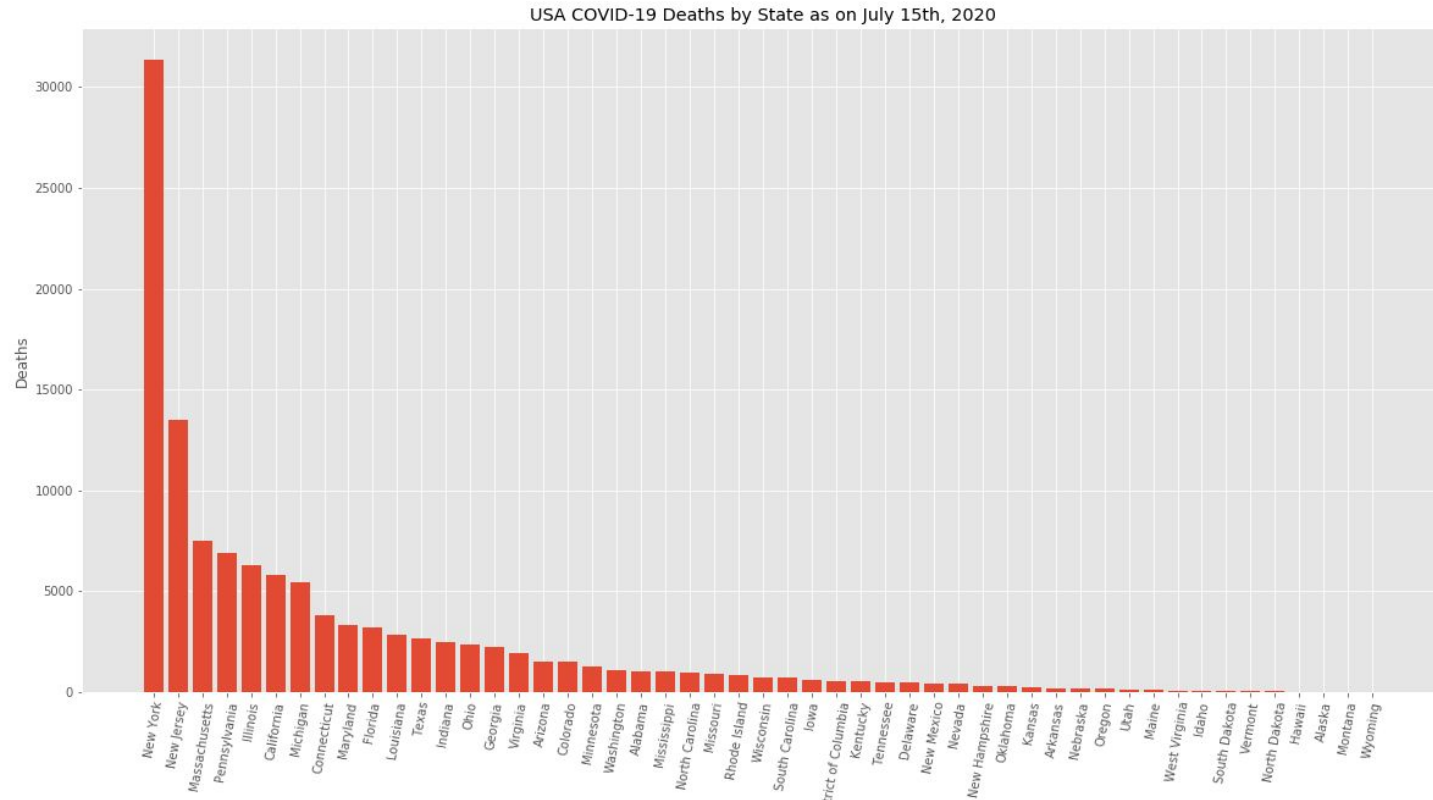
New York, New Jersey and Massachusetts have the biggest fatalities, California is 6th.

USA COVID-19 Deaths per Million Population by State as on July 15th, 2020
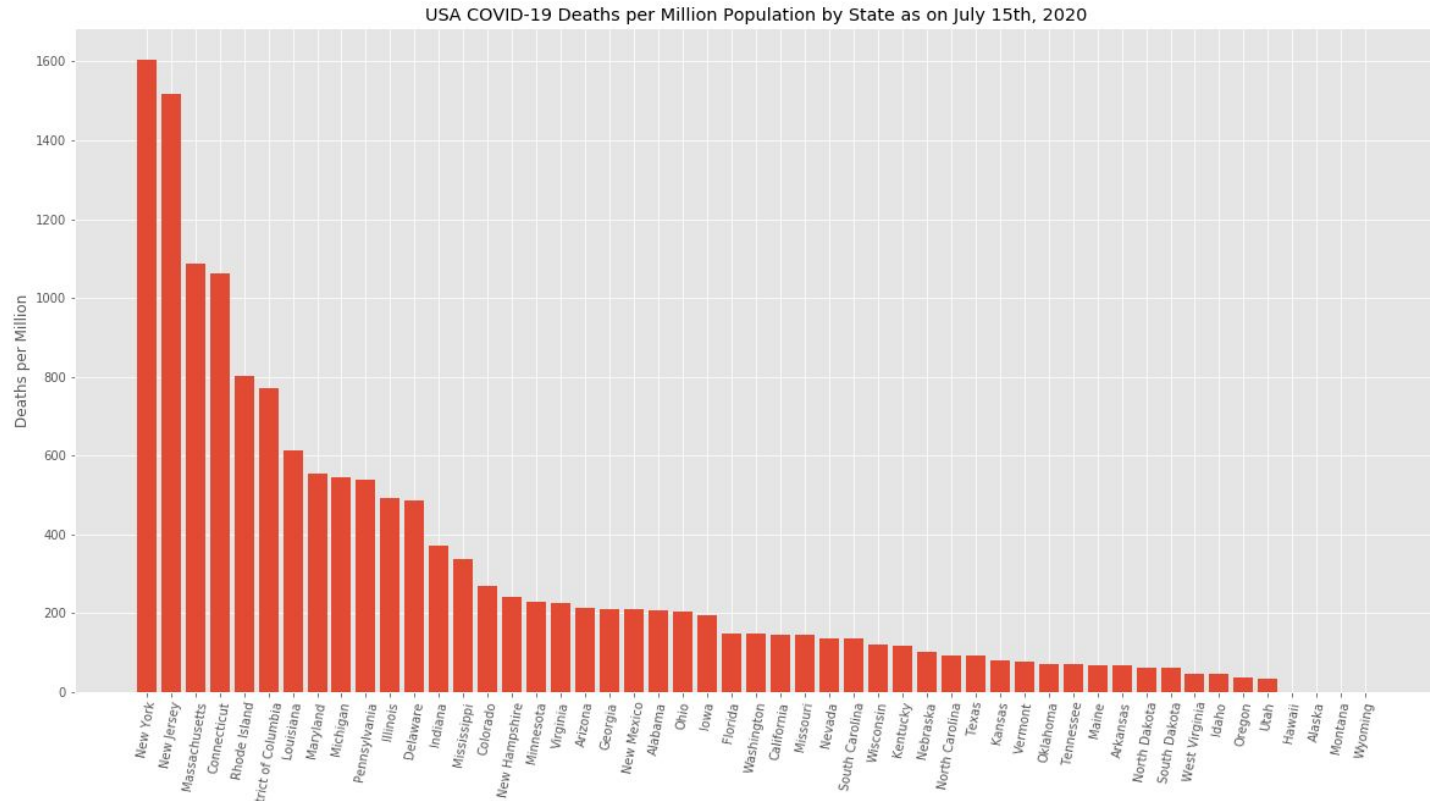
New York, New Jersey and Massachusetts also have the biggest fatalities per million, **California is 27th.**

USA COVID-19 Deaths by Age Group as on July 15th, 2020
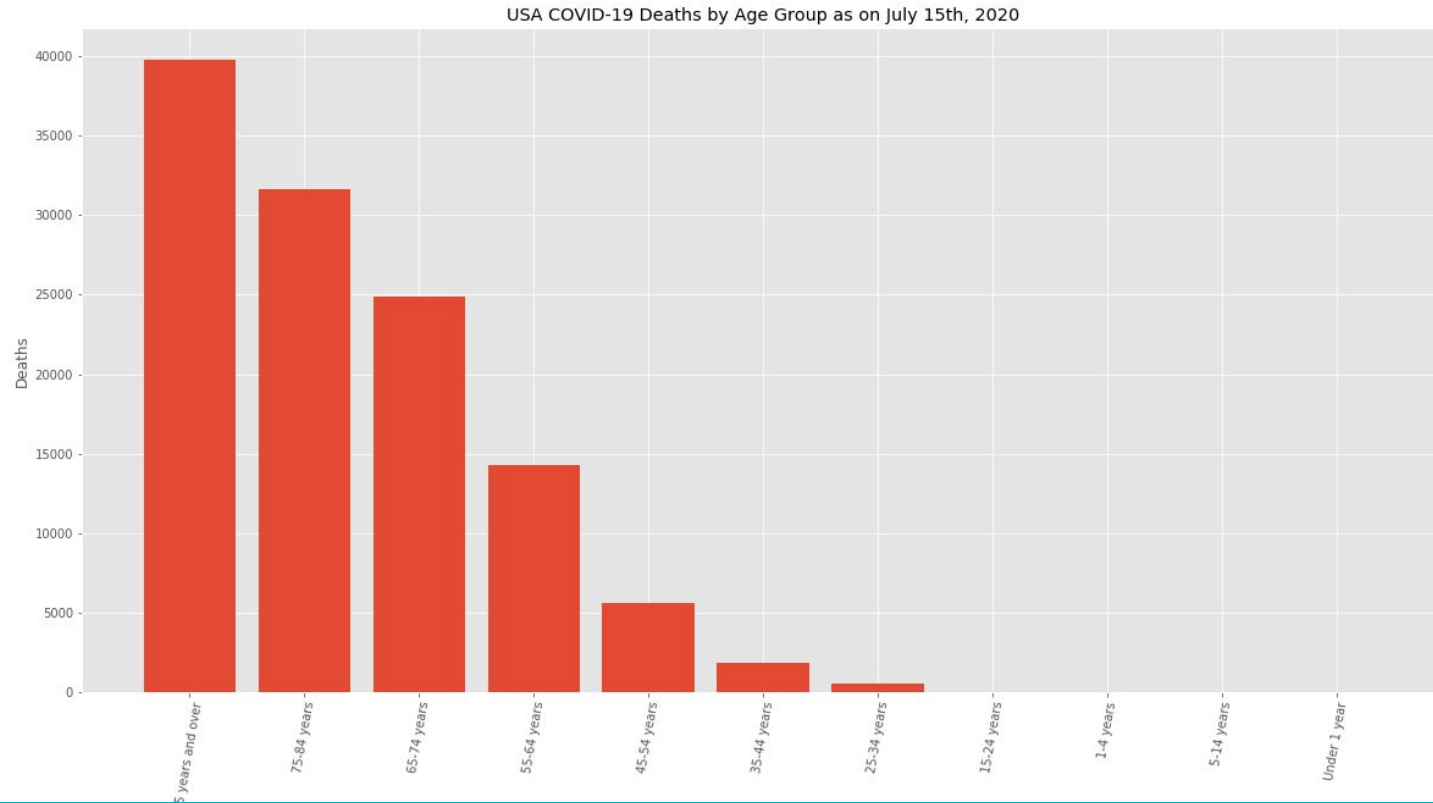
Death toll sloped down steadily across the age groups with **Seniors suffering the biggest toll**.

USA COVID-19 Deaths per Million Population by Age Group as on July 15th, 2020
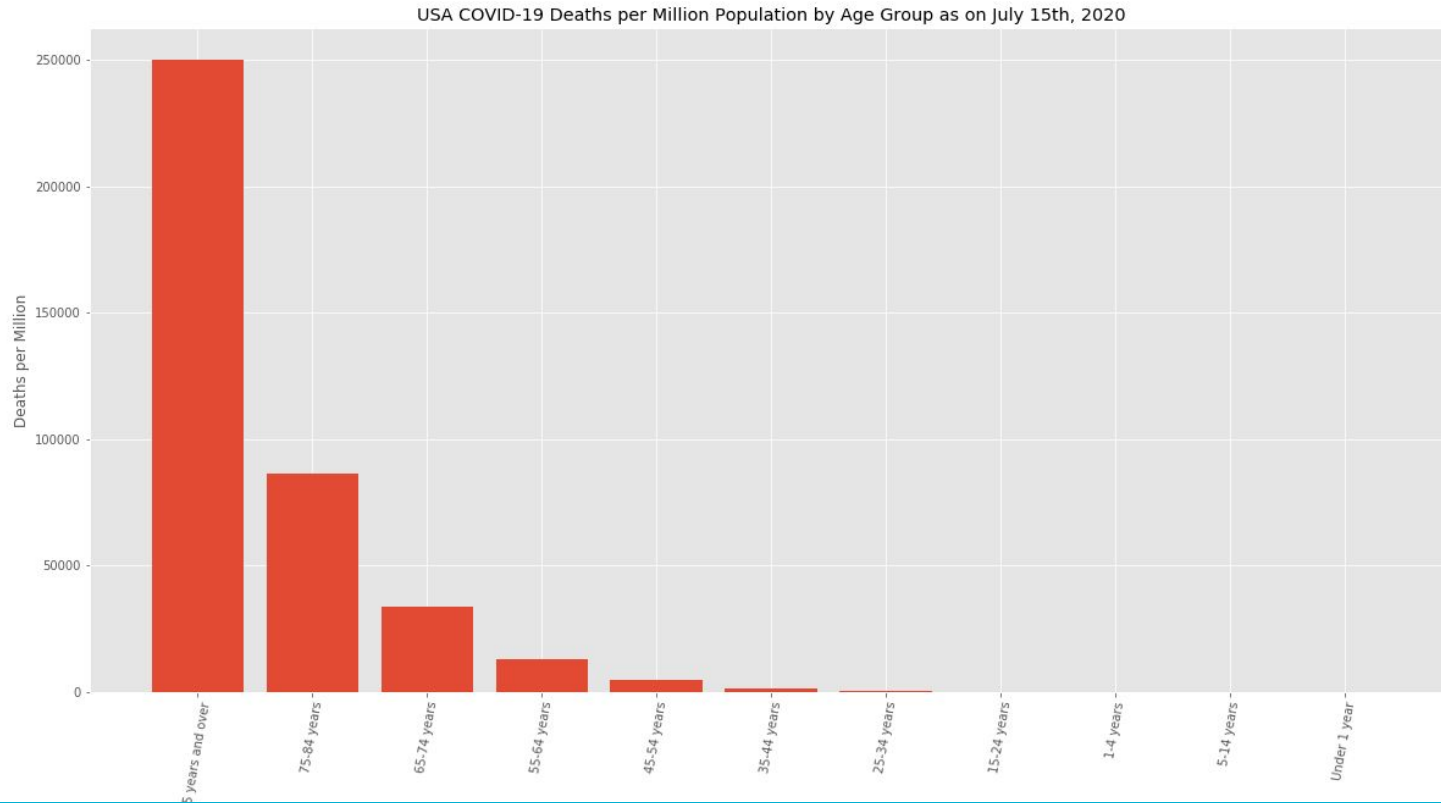
No change for deaths per million. **Seniors suffer the biggest toll, even relative to their population**.

USA COVID-19 Deaths by Race/Ethnicity as on July 15th, 2020
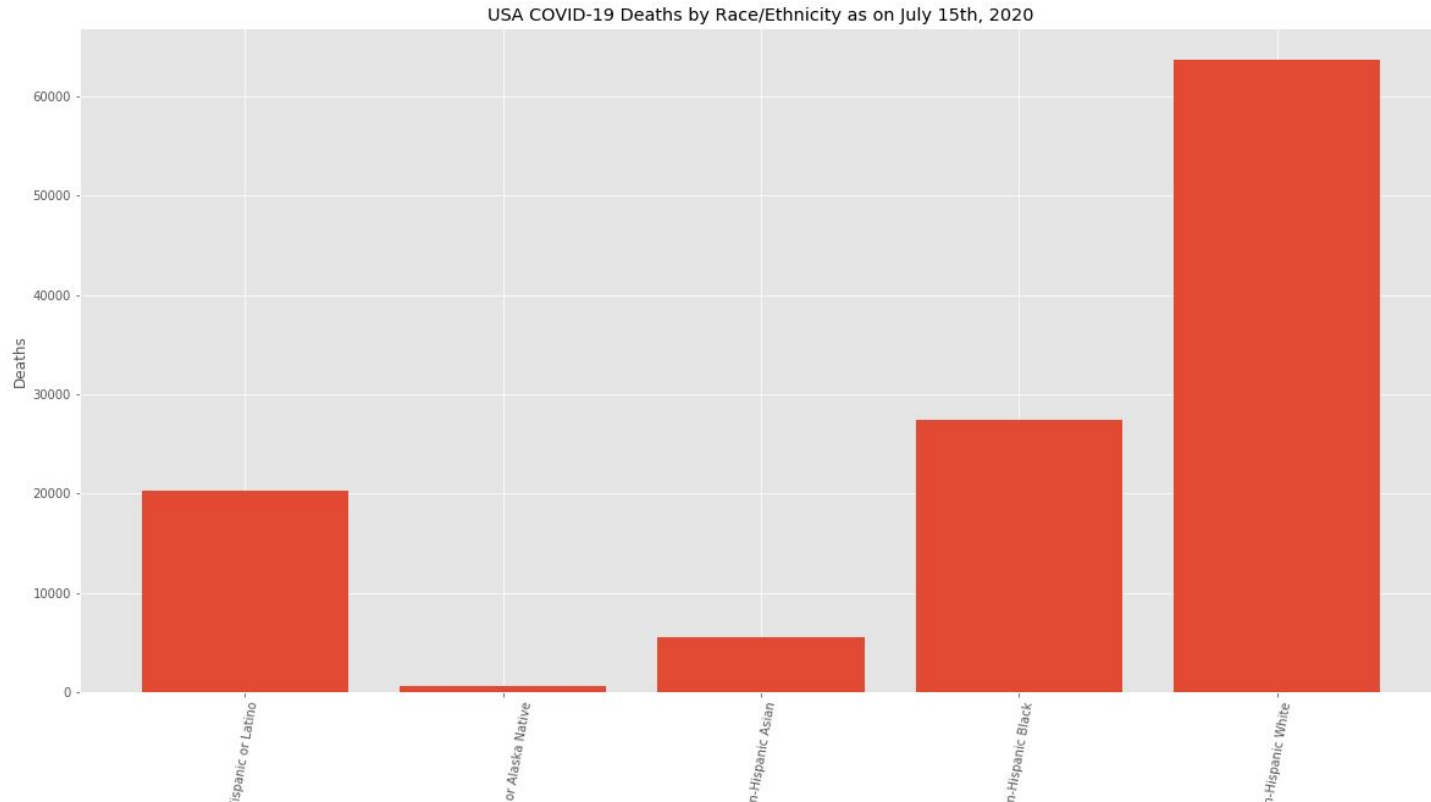
Whites paid the biggest toll in absolute number of deaths. Blacks, Hispanic/Latinos, Asians and American Indians / Alaskan Natives followed in that order.

USA COVID-19 Deaths per Million Population by Race/Ethnicity as on July 15th, 2020
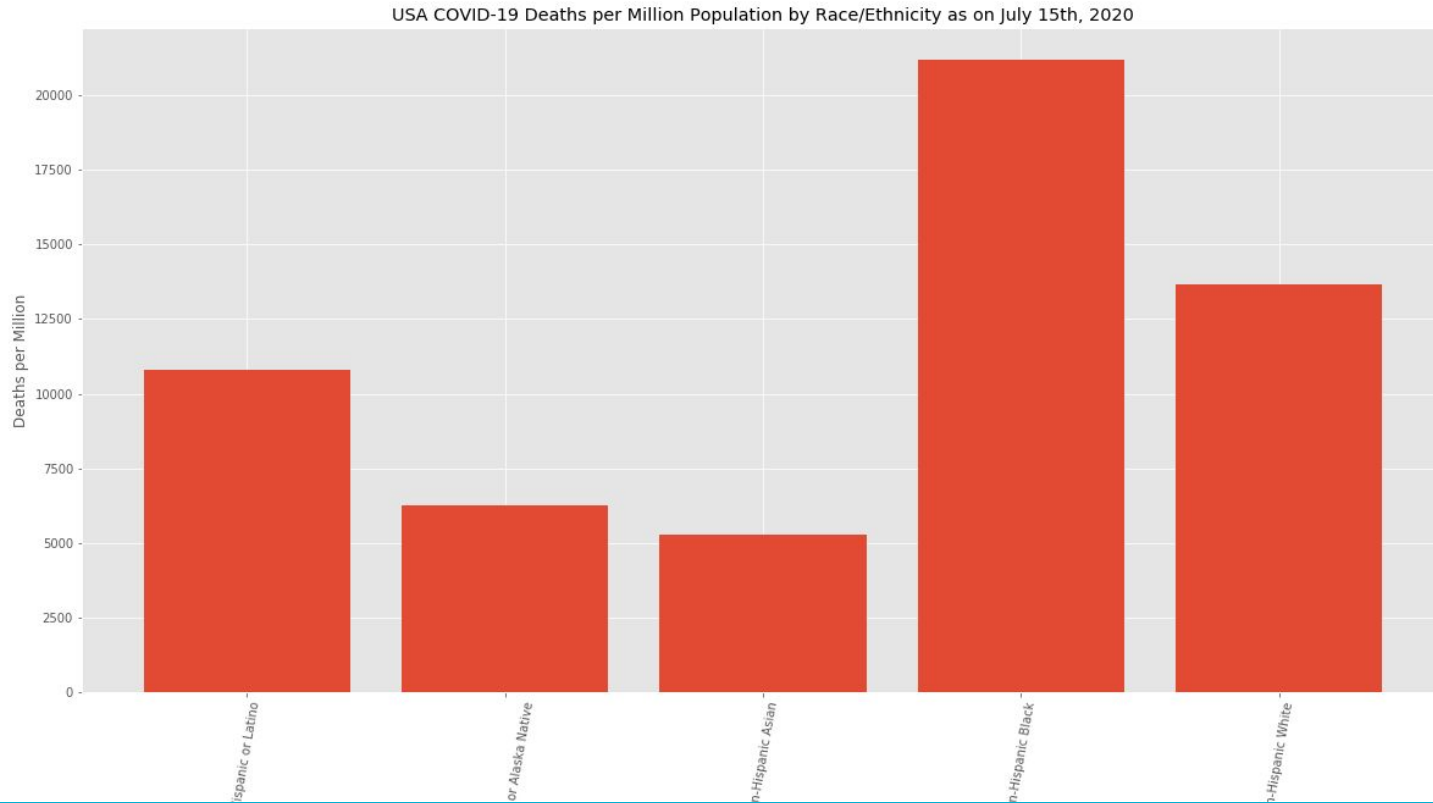
Per million, the order was Blacks (by far), Whites, Hispanics/Latinos, American Indians / Alaskan Natives, and Asians follow in that order.

USA COVID-19 Deaths by Seniors vs. Working Age Adults as on July 15th, 2020

Across all USA States (including District of Columbia)
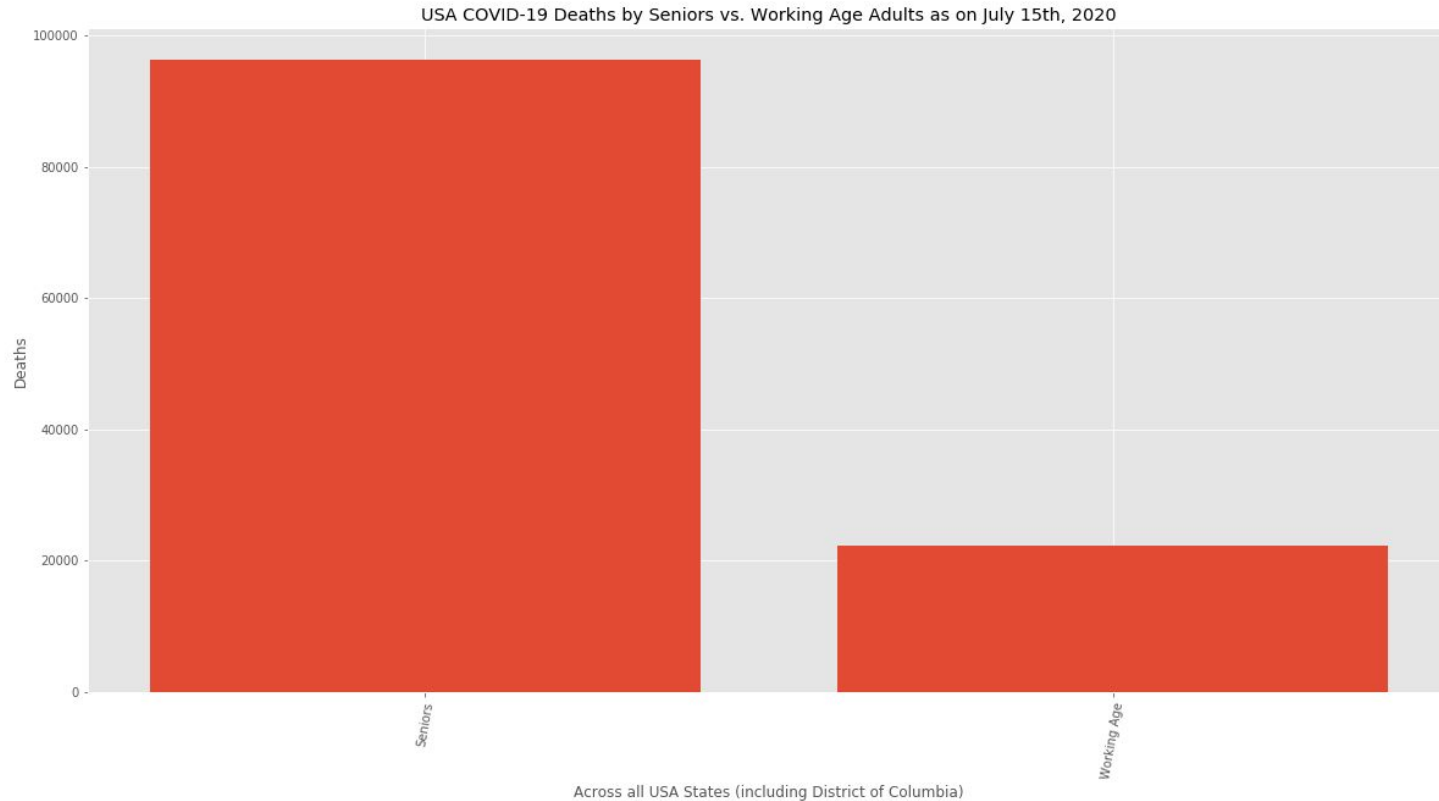
Comparing working age adults (25-64) to seniors (65+), <u>America's seniors have paid a terrible price!</u>

USA COVID-19 Deaths per Million by Seniors vs. Working Age Adults as on July 15th, 2020
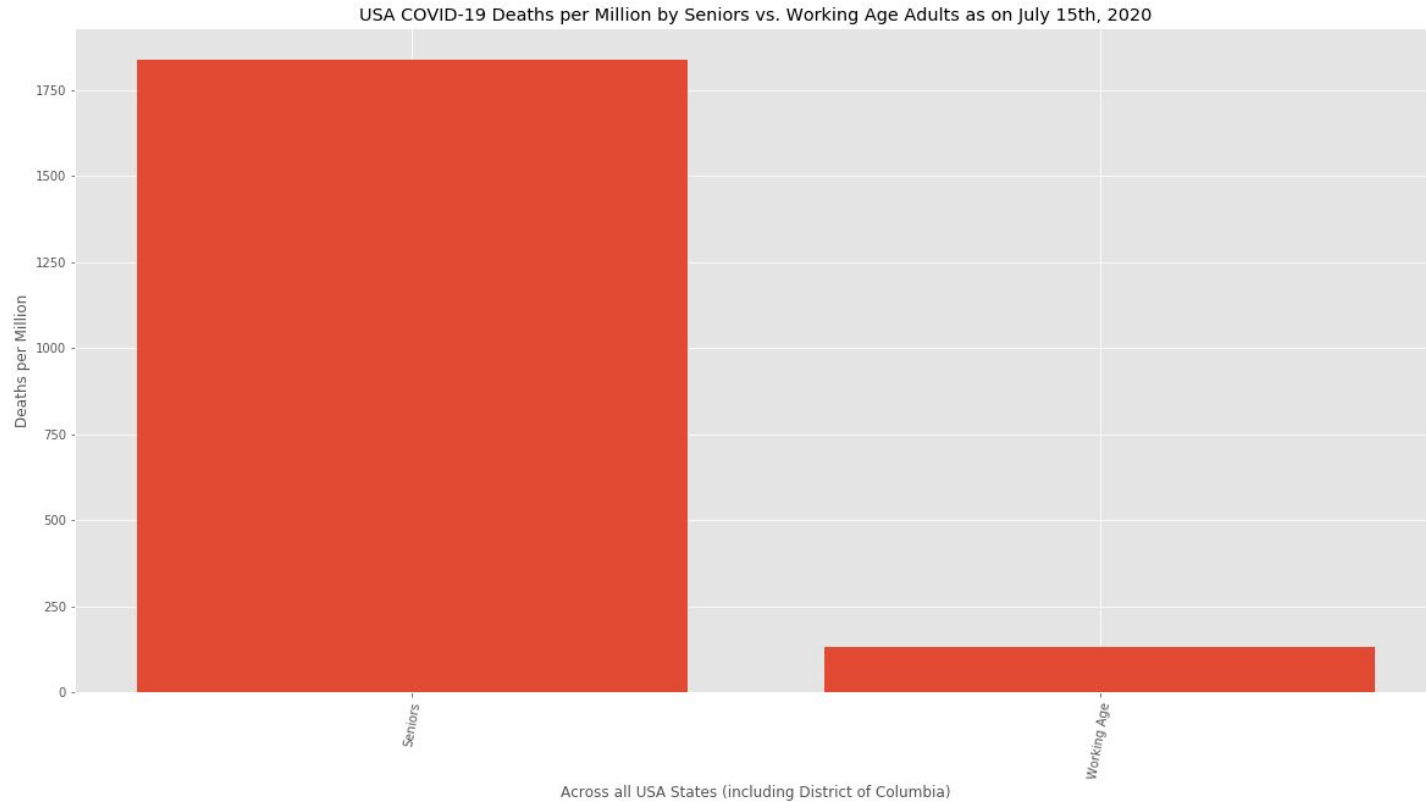
Normalized to per million, the story of <u>America's seniors is grim!</u>

Hypotheses Tested

- Null Hypothesis: There is no difference in COVID-19 fatality rates between Blacks and Whites in the USA
    - **z-test p-value = 0** : Null Hypothesis Rejected
    - Means: White fatality per million: 3,654.45 / Black fatality per million: 21,176.30
- Null Hypothesis: There is no difference in COVID-19 fatality rates between Hispanics/LatinXs and Whites in the USA
    - **z-test p-value = 0** : Null Hypothesis Rejected
    - Means: White fatality per million: 3,654.45 / Hispanic/LatinX fatality per million: 13,654.45
- Null Hypothesis: There is no difference in COVID-19 fatality rates between Blacks and Hispanics/LatinXs in the USA
    - **z-test p-value = 0** : Null Hypothesis Rejected
    - Mean: Blacks per Million: 10,808.11 / Mean: Hispanic/LatinX per Million: 13,654.45
- Null Hypothesis: There is no difference between COVID-19 fatality rates between Working age adults and Seniors in the USA
    - **z-test p-value = 0 : Null Hypothesis Rejected**
    - Mean: Working Age Adults per Million: 130.43 / Mean: Seniors per Million: 1836.92

Looking ahead:

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With the recent spikes in so many states,

is the disproportionate toll on Seniors, Blacks and Hispanics/LatinXs going to continue?

Or will increased public awareness and government understanding of the above trends change anything?